REMARKS

Applicants submit a Petition and Fee for a One-Month Extension of Time.

Claims 1-21 are all the claims presently pending in the application. Claims 1, 5-6, 10, 16,-17, and 19 are amended to more clearly define the invention. Claims 1, 10, and 16 are independent.

These amendments are made only to more particularly point out the invention for the Examiner and not for narrowing the scope of the claims or for any reason related to a statutory requirement for patentability.

Applicants also note that, notwithstanding any claim amendments herein or later during prosecution, Applicants' intent is to encompass equivalents of all claim elements.

Claims 1-21 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the Kashio et al. reference in view of either the Takamatsu et al. reference or the JP 2-56528 reference.

This rejection is respectfully traversed in the following discussion.

I. THE CLAIMED INVENTION

An exemplary embodiment of the claimed invention, as defined by, for example, independent claim 1, is directed to a one-way clutch that includes an outer ring fitting member with a hole, in which a recess portion is formed at an inner peripheral face of the hole, a shaft passed through the hole of the outer ring fitting member, a thin plate having a substantially uniform thickness and forming a shell-type annular outer ring with a plurality of cam faces on an inner peripheral face thereof, which is fitted into the hole of the outer ring fitting member and through which the shaft is passed, a plurality of rollers arranged between

the shaft and the annular outer ring so as to correspond to the plurality of cam faces, respectively, and an annular retainer for retaining the plurality of rollers fitted to the outer ring. The retainer includes an axially projected portion projected from the outer ring in an axial direction thereof, and a projection projected from the axially projected portion in a radial direction thereof, which is fitted to the recess portion of the outer ring fitting member to prevent the retainer from rotating with respect to the outer ring fitting member.

As explained by the present specification at, for example, page 3, line 6 through page 4, line 11, and as illustrated by Figures 5-7, conventional, small, one-way clutches that have an outer ring formed by bending a thin plate having a substantially uniform thickness have a problem in that when a shaft 53 is rotated in an idling direction (F) a roller 52 pushes against a retainer and may cause the retainer to rotate within the outer ring 51 (as shown in Fig. 6). Then, when the shaft 53 rotates in the opposite, locking direction (L), the roller 52 is stopped by the shifted retainer 43 before the roller 52 may move into a locking position through engagement with a cam surface 51b of the outer ring 51 (as shown in Fig. 7). Therefore, these conventional thin-plate, one-way clutches have difficulty in reliably obtaining a locking action.

In stark contrast, the present invention provides a small, thin-plate, one-way clutch with an outer ring having a substantially uniform thickness that prevents the retainer from rotating relative to the outer ring. Thus, since the retainer is prevented from rotating, the rollers will reliably engage the cam surface of the outer ring to lock the clutch.

II. THE 35 U.S.C. § 112, SECOND PARAGRAPH REJECTION

The Examiner alleges that claims 6-7 are indefinite. While Applicant submits that such would be clear to one of ordinary skill in the art to allow them to know the metes and bounds of the invention, taking the present Application as a whole, to speed prosecution, claim 6 has been amended in accordance with Examiner Bonck's very helpful suggestions.

In view of the foregoing, the Examiner is respectfully requested to withdraw this rejection.

III. THE PRIOR ART REJECTION

The Examiner alleges that either the Japanese reference or the Takamatsu et al. reference would have been combined with the Kashio et al. reference to form the claimed invention. Applicants submit, however, that these references would not have been combined and, even if combined, the combination would not teach or suggest each and every element of the claimed invention.

None of the applied references teaches or suggests the features of the claimed invention including a small, one-way clutch with an outer ring having a substantially uniform thickness that prevents the retainer from rotating relative to the outer ring. As explained above, these features are important for providing a small, one-way clutch having rollers that will reliably engage the cam surface of the outer ring to lock the clutch.

An exemplary feature of the present invention is to prevent an outer ring from rotating with respect to the retainer, the outer ring being of a shell type formed by bending a thin plate. The problem discussed in the background of the specification (especially on, for example, page 3) is specific to the shell type outer ring that is formed from a thin plate having a

substantially uniform thickness.

The Examiner alleges that the outer ring 1 that is disclosed by the Kashio et al. reference "can be considered a thin plate and can be considered shell-type, insofar as these terms are defined."

In this regard, Applicants respectfully submits that the Examiner is applying an overly, and unreasonably broad interpretation of the term "thin plate" that stretches the meaning of "thin plate" beyond the plain meaning of the term.

Further, this amendment clarifies that the thin plate has a substantially uniform thickness. Applicants submit that one of ordinary skill in the art understands from the specification that the inventor intends that the meaning of the term "thin plate" is the plain meaning which is to have a substantially uniform thickness.

"THE WORDS OF A CLAIM MUST BE GIVEN THEIR "PLAIN MEANING" UNLESS THEY ARE DEFINED IN THE SPECIFICATION

"This means that the words of a claim must be given their plain meaning unless applicant has provided a clear definition in the specification. . . . Ordinary, simple English words whose meaning is clear and unquestionable, absent any indication that their use in a particular context changes their meaning, are construed to mean exactly what they say." (Emphasis original, M.P.E.P. § 2111.01.I.)

"'PLAIN MEANING' REFERS TO THE ORDINARY AND CUSTOMARY MEANING GIVEN TO THE TERM BY THOSE OF ORDINARY SKILL IN THE ART"

> "Claim terms are presumed to have the ordinary and customary meanings attributed to them by those of ordinary skill in the art. In the absence of an express intent to impart a novel meaning to the claim terms, the words are presumed to take on the ordinary and customary meanings attributed to them by those of ordinary skill in the art. It is the use of the words in the context of the written description and customarily by those skilled in the relevant art that accurately reflects both the 'ordinary' and 'customary' meaning of the terms of the claims." (Emphasis original, M.P.E.P. § 2111.01.II.)

In this particular instance, the Examiner's allegation that the outer ring 1 that is disclosed by the Kashio et al. reference "can be considered a thin plate" stretches the meaning of the term "thin plate" beyond the plain meaning and ordinary and customary meaning of that term to those of ordinary skill in the art.

Applicants respectfully submit that one of ordinary skill in the art would understand the term "thin plate" to mean "having a substantially uniform thickness" and, as such, this amendment amends the claims to clarify that ordinary and customary meaning for the Examiner's convenience alone and specifically not for the purpose of narrowing the scope of the claim to overcome any of the applied references.

Applicants respectfully submit that the Kashio et al. reference discloses an outer ring that is not made from a thin plate and a cam face has a large depth since the material is radially thick and certainly does not disclose an outer ring that is made from a thin plate having a substantially uniform thickness.

The Examiner takes note of the description in the background section of the present

application regarding the problems of small, one-way clutches having an outer ring made from a thin plate as, for example, disclosed by the Japanese reference and that the Takamatsu et al. reference also appears to disclose an outer ring made from a thin plate.

The Examiner then contends that, even if the Kashio et al. reference did not disclose an outer ring made of a thin plate that "it would have been obvious to provide such an outer ring in Kashio et al. as suggested by the Japanese document and Takamatsu et al. documents, the motivation being to provide a lighter, more easily fabricated outer ring."

Applicants respectfully submits that one of ordinary skill in the art would not have been motivated at the time the invention was made to substitute one of the thin plate outer rings that are disclosed by either of the Japanese reference or the Takamatsu et al. reference for the ferrous porous metal outer ring that is disclosed by the Kashio et al. reference for the purpose of providing a lighter, more easily fabricated outer ring.

The Kashio et al. reference is directed to solving the problems of conventional one-way clutches, such as that illustrated in Figures 14 - 15, which include a closure member 52 that has a plurality of cages 57 and an outer ring 55 having nothing separating the cam surfaces of the outer ring. The Kashio et al. reference is concerned with the problem of the difficulty of assembling the one-way clutch because the compression leaf springs 61 are very difficult to insert properly into the cages 57.

The Kashio et al. reference solves this problem by providing a closure member 4 that includes integrally formed biasing members 20. In this manner, only the rollers 3 need to be assembled separately from the closure member 4 to the outer ring 1. (See, for example, Figure 4).

However, in order for the one-way clutch to operate with a closure member 4 that

does not include cages (57 in Figures 14 and 15), the outer ring must include side edges 6 and 6'. These side edges 6 and 6' perform the function of the cages 57 of limiting the travel of the rollers 3 and positioning the rollers within the one-way clutch. Therefore, without the side edges 6 and 6' in the outer ring 1, the one-way clutch that is disclosed by the Kashio et al. reference would fail to operate.

The Examiner alleges that it would have been obvious to modify the outer ring 1 that is disclosed in the Kashio et al. reference to replace the ferrous porous metal outer ring 1 with an outer ring that is formed from a thin plate. However, Applicants respectfully submit that it would be impossible to create the outer ring 1 having the side edges 6 and 6' using a thin plate. Thus, to replace the outer ring 1 that is disclosed by the Kashio et al. reference with an outer ring formed from a thin plate would result in an outer ring without side edges and therefore, would result in an inoperable one-way clutch.

The Kashio et al. reference makes it very clear that the purpose of the invention disclosed by the Kasio et al. reference is to reduce the difficulty of assembly by removing the cages 57 which position the rollers 59 from the closure member 52 and to provide an outer ring 1 having side edge 6 and 6' to serve the purpose of positioning the rollers 3 which permits that integration of the biasing members 20 into the closure member 4.

Therefore, to replace the outer member 1 having side edges 6 and 6' that is disclosed by the Kashio et al. reference with an outer member formed from a thin plate having a substantially uniform thickness would result in an outer member not having side edges 6 and 6' and, thus, such a modification would render the one-way clutch inoperable.

In other words, the Examiner's alleged modification would render the prior art unsatisfactory for its intended purpose.

"THE PROPOSED MODIFICATION CANNOT RENDER THE PRIOR ART UNSATISFACTORY FOR ITS INTENDED PURPOSE

"If proposed modification would render the prior art invention being modified unsatisfactory for it intended purpose, then there is no suggestion or motivation to make the proposed modification." (Emphasis original, M.P.E.P. § 2143.01)

Thus, one of ordinary skill in the art would not have been motivated to modify the outer ring as alleged by the Examiner.

Further, there is no evidence anywhere within any of the applied references or within the prior art that replacing the ferrous porous metal outer ring 1 with an outer ring formed from a thin plate having a substantially uniform thickness would "provide a lighter, more easily fabricated outer ring."

Additionally, the Examiner does not explain why the Examiner believes that replacing the ferrous porous metal outer ring 1 with an outer ring formed from a thin plate having a substantially uniform thickness would "provide a lighter, more easily fabricated outer ring." Without such an explanation, Applicants do not understand why anyone would make such a modification, let alone one of ordinary skill in the art at the time the invention was made.

Indeed, the Examiner fails to cite any source for the alleged motivation. Should the Examiner allege that such a motivation is "well known," Applicants submit that the Examiner's rejection involves taking Official Notice and respectfully request that the Examiner consider this Amendment a timely traversal of such an allegation and, therefore, should the Examiner persist in this allegation, that the Applicants hereby demand evidence supporting such an allegation.

Absent such a source for the alleged motivation, the Examiner's allegation that one of ordinary skill in the art would have been motivated to modify fails.

As explained previously, the type of outer rings that are disclosed by the Kashio et al. reference are all ferrous porous metal type of outer rings. This type of outer ring is formed by compressing a ferrous metal powder in a die. This process makes the type of outer ring shapes that are disclosed by the Kashio et al. reference possible. It is not clear how one of ordinary skill in the art could provide such outer ring shapes by forming these shapes from a thin plate.

Further, clearly none of the outer rings that are disclosed by the Kashio et al. reference are of substantially uniform thickness.

Lastly, Applicants respectfully submit that one of ordinary skill in the art would not have combined the references as alleged by the Examiner because the applied references are directed to completely different and unrelated problems and matters.

Specifically, the Kashio et al. reference is directed to the difficulty of assembling a one-way clutch having multiple compression leaf springs and a ferrous porous metal outer ring. (Col. 1, lines 25 - 41).

In stark contrast, the Takamatsu et al. reference is specifically directed to providing a device in which an overrunning clutch and a rolling bearing are combined and which the centering of the overrunning clutch with respect to the roller bearing can be performed automatically. (Col. 1, lines 25 - 39 and lines 61-66).

One of ordinary skill in the art who was concerned with the difficulty of assembling a one-way clutch having multiple compression leaf springs and a ferrous porous metal outer ring as the Kashio et al. reference is concerned would not have referred to the Takamatsu et

al. reference and vice-versa, because the Takamatsu et al. reference is concerned with the completely different and unrelated problem of providing a device in which an overrunning clutch and a rolling bearing are combined and which the centering of the overrunning clutch with respect to the roller bearing can be performed automatically. Indeed, the devices that is disclosed Takamatsu et al. reference does not suffer from the problem being solved by the Kashio et al. reference and the device that is disclosed by the Kashio et al. reference does not suffer from the problem being solved by the Takamatsu et al. reference.

Therefore, Applicants respectfully submit that one of ordinary skill in the art would not have referred to one of these references when concerned with the problems presented by the other reference. Thus, these references would not have been combined.

Therefore, the Examiner is respectfully requested to withdraw the rejection of claims 1-21.

III. FORMAL MATTERS AND CONCLUSION

In view of the foregoing amendments and remarks, Applicants respectfully submit that claims 1-21, all the claims presently pending in the Application, are patentably distinct over the prior art of record and are in condition for allowance. The Examiner is respectfully requested to pass the above application to issue at the earliest possible time.

Should the Examiner find the Application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary in a telephonic or personal interview.

The Commissioner is hereby authorized to charge any deficiency in fees or to credit any overpayment in fees to Attorney's Deposit Account No. 50-0481.

Respectfully Submitted,

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